

THE ROLE OF ^{234}U TRANSITIONAL LEVELS IN THE PHOTOFISSION FRAGMENT ANGULAR DISTRIBUTIONS.

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The angular distributions of ^{234}U photofission fragments, are interpreted via calculated transitional levels for E1, M1 and E2 excitation in the first and second saddle points.

The deformation energies and corresponding parameters in the saddle points, were calculated [1] by taking into account the Strutinsky shell corrections [2]. The Pashkevich parametrization [3] has been used to describe the nuclear shape. Single particle spectra for neutrons and protons were calculated using the Woods-Saxon deformed potential, with Chepurnov parameters [4]. The deformation parameters for these saddle points and the single particle levels, were used as input in the calculation of the quasi-particle and rotational spectra, and a more realistic level density calculation was performed using Lipkin-Nogami projectors in the BCS approach [5].

We would like to point out that our approach was previously employed with success in the calculation of the transition nucleus levels at saddle points[6], which allowed the identification , for the first time, of a concentration of M1 strength in the electro- and photofission of ^{239}Pu near the fission barrier, plus and an explanation for the main experimental structures in ^{237}Np (γ, f) cross section[7].

In the present study of ^{234}U we found strong evidences supporting the occurrence of a degeneracy of the (2+, 0) and (1-, 0) transition levels.

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